

WHAT IS CLAIMED IS:

1. A magnetic disk apparatus comprising a magnetic head formed by stacking thin films, a rotated magnetic disk, and a means for positioning said magnetic head relative to said rotated magnetic disk, wherein said magnetic head comprises a first magnetic pole and a second magnetic pole disposed on the downstream side of said first magnetic pole with respect to the rotating direction of said magnetic disk, and, at a position on said magnetic disk where the angle S between the rotating direction of said magnetic disk and the film thickness direction of said second magnetic pole is maximum, the length of the projection of said second magnetic pole onto the magnetic disk surface as measured along the radial direction of said magnetic disk is not more than the track pitch of said magnetic disk.

2. A magnetic disk apparatus comprising a magnetic head, and a rotated magnetic disk, wherein said magnetic head comprises a first magnetic pole and a second magnetic pole disposed on the downstream side of said first magnetic pole with respect to the rotating direction of said magnetic disk, said first and second magnetic poles have faced portions forming a recording gap therebetween, and the shape of projection of said second magnetic pole onto said magnetic disk comprises a first side intersecting said faced portions, a second side faced to said magnetic gap or

on the opposite side of said magnetic gap, and a third side intersecting said first and second sides.

3. A magnetic disk apparatus comprising a magnetic head having a magnetic pole formed by stacking thin films,
 5 a rotated magnetic disk, and a means for positioning said magnetic head relative to said magnetic disk, wherein, at a position on the recording disk where the angle S between the rotating direction of said magnetic disk and the thickness direction of said thin films constituting said
 10 magnetic pole is maximum, the sum of $P \times \sin(S)$ and $W \times \cos(S)$ is not more than the track pitch of said magnetic disk, where P is the film thickness of said magnetic pole and W is the width of said magnetic pole.

4. A magnetic disk apparatus as set forth in claim 3,
 15 wherein said magnetic head comprises a first magnetic pole and a second magnetic pole disposed on the downstream side of said first magnetic pole with respect to the rotating direction of said magnetic disk, and, at a position on said magnetic disk where the angle S between the rotating
 20 direction of said magnetic disk and the film thickness direction of said second pole is maximum, the sum of $P \times \sin(S)$ and $W \times \cos(S)$ is not more than the track pitch of said magnetic disk, where P is the film thickness of said second magnetic pole and W is the width of said second
 25 magnetic pole.

5. A magnetic disk apparatus as set forth in claim 1,

wherein said magnetic disk apparatus is a longitudinal magnetic recording apparatus.

6. A magnetic disk apparatus as set forth in claim 1, wherein said magnetic disk apparatus is a perpendicular

5 magnetic recording apparatus.

7. A magnetic head comprising a first magnetic pole and a second magnetic pole having faced portions forming a magnetic gap therebetween, wherein the shape of said second magnetic pole as viewed from a sliding surface of said
10 magnetic disk comprises a first side intersecting said faced portions, a second side faced to said magnetic gap or on the opposite side of said magnetic gap, and a third side intersecting said first and second sides.

8. A magnetic head as set forth in claim 7, wherein
15 said third side is disposed on the downstream side with respect to the moving direction of said magnetic head.

9. A magnetic head as set forth in claim 7, wherein said third side is disposed on the upstream side with respect to the moving direction of said magnetic head.

20 10. A magnetic disk apparatus comprising a magnetic head formed by stacking thin films, and a rotated magnetic disk, wherein said magnetic head comprises a first magnetic pole and a second magnetic pole disposed on the downstream side with respect to the rotating direction of said
25 magnetic disk, and, at a position on said magnetic disk where the angle S between the rotating direction of said

magnetic disk and the film thickness direction of said second magnetic pole is maximum, the length of an overlapped area of the projection of said second magnetic pole onto the magnetic disk surface and track width of said magnetic disk is not more than 5% of said track width.

11. A method of recording information wherein, at the time of modifying or appending information, the modified or appended information is stored in a sector different from a sector in which previously recorded information is present, without overwriting a part or the entire body of said sector in which said previously recorded information is present.